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Invariants and rings of quotients of H-semiprime H-module algebras satisfying a polynomial identity

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Abstract

© 2016, Allerton Press, Inc.We consider an action of a finite-dimensional Hopf algebra H on a PI-algebra. We prove that an H-semiprime H-module algebra A has a Frobenius artinian classical ring of quotients Q, provided that A has a finite set of H-prime ideals with zero intersection. The ring of quotients Q is an H-semisimple H-module algebra and a finitely generated module over the subalgebra of central invariants. Moreover, if algebra A is a projective module of constant rank over its center, then A is integral over its subalgebra of central invariants.

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Keywords

Hopf algebra, PI-algebra, ring of quotients, theory of invariants